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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,935	03/01/2002	Shunpei Yamazaki	740756-2447	8560

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EXAMINER
BAUMEISTER, BRADLEY W

ART UNIT	PAPER NUMBER
2815	

DATE MAILED: 01/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
10/084,935	Yamazaki et al.
Examiner	**Art Unit**
B. William Baumeister	2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Mar 1, 2002*.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-34* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *Mar 1, 2002* is/are a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☒ None of:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). *4,5,6*
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-8, 11-16 and 27-32 are rejected under 35 U.S.C. 102(a) as being anticipated by Applicant's prior art admissions.

a. These claims limit the upper concentrations of halogen and carbon impurities in the SiOx film of a TFT, but do not require that such impurities actually be present at all. As such, the claims read on a TFT wherein the SiOx film was formed by thermal oxidation of the underlying crystalline Si since in such TFT, effectively no halogens or carbon would be present, as they impurities arise from the CVD process. Applicant has acknowledged that such thermally-oxidized TFTs were known (BACKGROUND OF THE INVENTION) and that the SiOx films formed by thermal oxidation resulted in uniform thickness (page 1, second paragraph of the BACKGROUND section).

b. Regarding the claims having limitations relating to second ion mass spectrospcopy, the Examiner notes that spectroscopy detection does not in any way alter or influence a structure, but rather is an analytical tool for determining a structure's composition. As such, the claim language does not further structurally limit the claimed product. As such, the language is being afforded no patentable weight according to either one of the well-settled product-by-process or intended-use doctrines.

3. Claims 1-18 and 27-34 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 01-238,024 (previously made of record in IDS #5). JP '024 discloses a TFT having a SiOx insulating layer made by plasma CVD. The method by which this TFT is formed does not employ a halogen. As such the reference meets the limitation that the halogen is less than any of the maximum concentrations cited because none would be present. Further, the JP '024 teaches that after formation, no alkyl group (C impurities) are left (Effect of the Invention); as such, the reference anticipates the claims.

a. JP '024 also provides evidence that according to the product-by-process doctrine, it is immaterial to the final structure what pre-cursor organic silanes as set forth in various dependent claims (e.g., claims 9 and 10) were employed, since they are not present in the final structure. As such, the burden has shifted to Applicant to show that any product-by-process limitations necessarily produce a structural difference.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Applicant's prior art admissions as applied to the claims above, or alternatively over JP '024, as applied to the claims above. Regardless of whether either Applicant or JP '024 further acknowledges or discloses that it was also known to form TFT gates specifically of Al, Ti or TiN, it was well known to--and regularly practiced by--those of ordinary skill in the art at the time of the invention to employ these particular materials and it would have been obvious to have done so as they provide good conductivity and they were the materials conventionally used.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686

F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-34 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-28 of U.S. Patent No. 5,866,932. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are directed towards TFTs having SiOx layers with limited halogen and carbon concentrations, and because the present claims are either (1) generic to or broader than (and therefore anticipate) the '932 claims and/or (2) are narrower than the '932 claims only with obvious variations.

a. The present claims anticipate some of the '932 claims because some of the '932 claims (e.g., claim 22) set forth that the substrate is composed of glass whereas the present claims more broadly set forth that an insulating surface (e.g., claim 1). See e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed.

Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985) for the proposition that an obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examined application claim is not patentably distinct from the reference claim(s) because the examined claim is either anticipated by, or would have been obvious over, the reference claim(s).

b. The present claims are more narrow than the '932 claims in that the '932 claims set forth a non-monocrystalline semiconductor island (e.g., claim 19, reading on either an amorphous or polycrystalline Si film), whereas some of the present claims set forth a crystalline semiconductor island (e.g., claim 11, reading on either a monocrystalline or polycrystalline Si film). Thus, the claims are obvious variants in that they both read on polycrystalline Si films.

INFORMATION ON HOW TO CONTACT THE USPTO

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to the examiner, **B. William Baumeister,** at **(703) 306-9165.** The examiner can normally be reached Monday through Friday, 8:30 a.m. to 5:00 p.m. If the Examiner is not available, the Examiner's supervisor, Mr. Eddie Lee, can be reached at (703) 308-1690. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

B. William Baumeister
Patent Examiner, Art Unit 2815
January 18, 2003